<center>**SESSION #1**</center>

<center>**JOINT MODELING AND SIMULATION SYSTEM (JMASS)**</center>

ISSUE
JMASS provides a common modeling and simulation (M&S) system that can be used for tactical modeling across the acquisition and test processes, but due to streamlining initiatives the Acquisition community is not supporting its use.

BACKGROUND
- JMASS is an Air Force-directed engineering and manufacturing development program responsible for developing and delivering a distributed, object-oriented M&S architecture focused at the engagement- and mission-levels of simulation.
  - –– Designed specifically to fulfill the simulation architecture role as defined in the emerging standard test processes from within the Air Force and OSD T&E organizations.
  - –– Provides a common system that allows users to take advantage of each other's expertise, and to avoid continually reinventing models and infrastructure.
  - –– Goal is to improve the consistency, credibility, and synergy of M&S throughout DoD.
- JMASS's function is to provide a capability for domain experts to build models that will satisfy the simulation needs of various users throughout DoD and industry.
  - –– Models and model components are built by domain experts--not the J-MASS Program Office (i.e., Intel community builds the threat models and blue weapons developers build their blue weapons system model).
  - –– Missile, aircraft, gun, and multi-spectral sensor models are being developed by the Missile and Space Intelligence Center (MSIC), National Aerospace Intelligence Center (NAIC), Air Force Intelligence Warfare Center (AFIWC), Aeronautical System Center (ASC), and Wright Laboratory Armament Directorate.
  - –– JMASS provides a Modeling and Simulation Reuse Library (MSRL) for model developers and users to store models and model components; this is a key attribute of JMASS
    - –––Models accepted into the MSRL will have a pedigree associated with the model: verification and validation (V&V) report, the model developer's name/organization, limitations of the model, etc.
    - –––MSRL will be compatible with the Modeling and Simulation Resource Repository (MSRR) being proposed by the Defense Modeling and Simulation Office (DMSO)

DISCUSSION
- **Funding** JMASS has not had the level of funds required to fully implement the architecture
  - –– AF/TE has funded significant JMASS architecture development until FY00; POM funding for JMASS transitions to AF/XOM starting in FY98
  - –– AF/TE funding most of the threat and some of the blue system model development efforts primarily in support of the B-1 Defensive System Upgrade Program (DSUP)

— National Air Intelligence Center (NAIC) designated Air Force's Executive Agent for Threat Model Development; NAIC ensure intel production centers develop quality models in timely fashion at an optimal cost
— DIA designated DoD Executive Agent for Threat Model Development
— FY97 model development to support B-1 DSUP is fully funded; very little model development funding programmed for FY98 and beyond

- **Digital system model population** There is a need to coordinate development of JMASS threat models, blue systems, and environments with the JSIMS and JWARS programs in order to reduce duplication of effort, increase system capabilities, and decrease costs
  — Duplication and stovepiping in model development will continue even with the new generation of M&S systems unless agreements are made to share models/data
  — Model development and JMASS improvements are being discussed and worked to support acquisition programs such as the F-22 Full Mission Simulator, open-air ranges, U-2, Tier II+ Unmanned Aerospace Vehicle, Integrated Defensive ECM system for the Navy, and the Suite of Integrated Infrared Countermeasures/Common Missile Warning System for the Army
  — Modeling, acquisition, T&E, intelligence communities must address the need to build digital representations of their systems

- **Integration of the "J-series" of initiatives** For the mid-term and future, the AF must focus on integrating the "J-series" initiatives, using a digital object approach
  — Vertical and horizontal integration with wargaming and training applications must be pursued
  — AF policy must be written to guide AF participation

SOLUTION
- SAF/AQ "buy-in" to using JMASS
- Establish policy requiring JMASS-compliant digital system models (DSMs)
  — System managers must build, maintain, and upgrade DSMs of their weapon systems from cradle to grave; blue DSMs must look just like the "rubber on the ramp"